Arka Pramanik

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Summary

Software Engineer with 2+ years at Hewlett Packard Enterprise building Kubernetes services and LLM agents in Python.

Experience

Hewlett Packard Enterprise **Sep 2024 – Present**
Systems/Software Engineer 1, HPC Cray System Management (CSM) *Bangalore, India*

ATLAS (Automated Triaging and Log Analysis Solution) | *Internal AI root cause analysis (RCA) tool*

- Conceived and now lead ATLAS, a **3-stage AI pipeline** (50+ health checks, FAISS similarity search, LLM root cause analysis) that cut manual triage by about **80%**.
- Architected the Root Cause Analyzer as a Python **MCP server** whose **15 tools** let **GitHub Copilot agents** gather Jira, GitHub and documentation evidence and write RCA reports autonomously.
- Rolled out ATLAS to **3+ teams** as an official HPE tool, delivering RCA reports in about **2 minutes**.

Rack Resiliency Service (RRS) | *Python, Flask, Kubernetes, Ceph, Helm*

- Co-developed RRS end to end for **CSM 1.7**, providing rack-level **high availability** for **59 critical services**.
- Implemented the **Flask REST API** (**7 endpoints**, OpenAPI 3.1) and **RRS CLI** (**7 commands**), letting operators inspect rack zones and register critical services through JSON payloads.
- Built the **monitoring service** that detects node or rack failures and flags imbalanced services within **10 minutes**.
- Enforced rack-aware replica placement with a **Kyverno** policy, validated on **3- and 4-zone** bare-metal layouts.
- Packaged RRS as **4 Docker images** with **Jenkins CI/CD** and made **4 Ansible roles** idempotent.

Platform Engineering | *Istio, Kubernetes, Helm*

- Delivered the **Istio 1.19.10 to 1.26.0** upgrade for **Kubernetes 1.32**, replacing the operator with **Helm** charts.
- Owned platform and hardware-management services, closing **10 triage issues** and **2 customer cases**.
- Fixed **etcd health checks** that passed with **0 ready pods** and automated **CRD upgrades** via Helm hooks.

Hewlett Packard Enterprise **Feb 2024 – Aug 2024**
HPC Software Engineer Intern *Bangalore, India*

- Upgraded **Istio** from **1.11.8 to 1.19.10** (8 minor versions), enabling **Kubernetes 1.24**.
- Validated the upgrade through **5 POCs** spanning Istio 1.13 to 1.19.
- Rebased HPE's Istio fork on upstream, updated **3 Helm charts** and upgraded Kiali to 1.75.0.

Hewlett Packard Enterprise **Jan 2023 – Jun 2023**
HPE CTY Summer Intern *Remote*

- Created a **Grafana** security dashboard for Kubernetes covering **116 CIS checks** and image vulnerabilities.
- Automated hourly **Trivy** scans with **Helm**, **2 scripts**, Prometheus and **Node.js**.

Projects

ATLAS Framework | *Python, MCP, FastAPI, FAISS, retrieval-augmented generation (RAG)*

- Engineered **agent context** via tiered retrieval and **3-layer** de-duplication so the LLM reads all evidence at once.
- Shipped semantic search with **BGE-M3** embeddings and re-ranking across **3,291 Jira tickets**.
- Launched the web UI and REST API with **FastAPI** and **GitHub Copilot SDK**, backed by **270+** pytest tests.

Technical Skills

Languages and Frameworks: Python, Flask, FastAPI, TypeScript, JavaScript, Go, Bash, C/C++, SQL
Cloud and DevOps: Kubernetes, Docker, Helm, Istio, Ansible, Jenkins, GitHub Actions, CI/CD, Linux
Backend and AI: REST APIs, microservices, generative AI, agentic AI, RAG, Model Context Protocol (MCP)
Tools: Git, Jira, Prometheus, Grafana, pytest

Education

Vellore Institute of Technology **Tamil Nadu, India**
Bachelor of Technology (B.Tech) in Computer Science and Engineering (2020 – 2024) *CGPA: **9.03/10***

St. Stephen's School **West Bengal, India**
*Class XII: **96.5%*** *Class X: **89.6%***

Certifications

- **Certified Kubernetes Application Developer (CKAD)**, The Linux Foundation, 2025.
- **Microsoft Certified: Azure Fundamentals (AZ-900)**, 2022.

Achievements

- **Mentor, HPE CTY Program 2026**; **top 25** university selection in 2023.
- **Top 200** in India for Amazon ML Summer School 2022; **96.67 percentile** in JEE Main.
- **ArrowOS device maintainer**; GirlScript Summer of Code 2022; Codeforces AP_XD; LeetCode Arka_2910.